

CLAIMS:

1. A method for automatically setting an operative state of a wideband amplifier (201) in a multi-channel receiver, the method comprising the steps of measuring at least one signal quality parameter; and deciding to switch the amplifier (201) either to its ON state (active state) or to its OFF state (inactive state) on the basis of the measured parameter,
5 wherein the step of deciding to switch the amplifier (201) to its ON state (active state) is exclusively taken during at least one time interval when the receiver is switched to a channel.
2. A method according to claim 1, wherein, if it has been decided to switch the amplifier (201) to its ON state (active state) on the basis of the measuring result, signal
10 quality monitoring procedures are performed repeatedly, each procedure comprising the steps of:
 - remeasuring said signal quality parameter;
 - deciding, on the basis of the remeasured parameter, to either maintain the amplifier (201) in its ON state (active state) or to switch the amplifier (201) to its OFF state (inactive
15 state).
3. A method according to claim 1, wherein the step of measuring at least one signal quality parameter comprises the step of measuring intermodulation products.
- 20 4. A method according to claim 1, wherein the step of measuring at least one signal quality parameter comprises the step of measuring a noise-related signal.
5. A method according to claim 1, wherein the step of measuring at least one signal quality parameter comprises determining whether an automatic gain control system of
25 the receiver is active or inactive.
6. A method according to claim 5, comprising the step of determining whether a DC voltage level of an automatic gain control signal (AGC2) has a first value (5 V)

indicating that the automatic gain control system is inactive, or has a value within a predetermined range (<4 V) indicating that the automatic gain control system is active.

7. A method according to claim 5, comprising the step of determining whether an automatic gain control signal output (174) of a gain controller (170) draws substantially no current, indicating that the automatic gain control system is inactive, or does draw a substantial amount of current, indicating that the automatic gain control system is active.

8. A method according to claim 1, wherein the step of deciding to switch the amplifier (201) comprises the steps of:

- a) switching the amplifier (201) to its OFF state (inactive state);
- b) measuring a value $S_{IP}(LNA=OFF)$ of said at least one signal quality parameter while the amplifier (201) is maintained in its OFF state;
- c) comparing the measured value ($S_{IP}(LNA=OFF)$) with a predetermined decision level;
- d) if the comparison indicates good signal conditions, deciding to keep the amplifier (201) operating in its OFF state.

9. A method according to claim 1, wherein the step of deciding to switch the amplifier (201) comprises the steps of:

- a) switching the amplifier (201) to its OFF state (inactive state);
- b) measuring a value of $S_{IP}(LNA=OFF)$ said at least one signal quality parameter while the amplifier (201) is maintained in its OFF state;
- e) switching the amplifier (201) to its ON state (active state);
- 25 f) measuring a value of $S_{IP}(LNA=ON)$ said at least one signal quality parameter while the amplifier (201) is maintained in its ON state;
- g) comparing the two measured values ($S_{IP}(LNA=OFF)$; $S_{IP}(LNA=ON)$);
- h1) if the difference between the two measured values ($S_{IP}(LNA=OFF)$; $S_{IP}(LNA=ON)$) indicates more intermodulation products in the case when the amplifier (201) is in its OFF state as compared to the case when the amplifier (201) is in its ON state, deciding to switch the amplifier (201) to its ON state;
- h2) if the difference between the two measured values ($S_{IP}(LNA=OFF)$;

$S_{IP}(LNA=ON)$) indicates more intermodulation products in the case when the amplifier (201) is in its ON state as compared to the case when the amplifier (201) is in its OFF state, deciding to switch the amplifier (201) to its OFF state.

5 10. A method according to claim 9, wherein steps (a) and (b) are taken before steps (e) and (f).

11. A method according to claim 9, comprising the step of:

h3) if the two measured values ($S_{IP}(LNA=OFF)$; $S_{IP}(LNA=ON)$) are mutually
10 equal, deciding to switch the amplifier (201) to its ON state.

12. A method according to claim 9, comprising the step of:

h3) if the two measured values ($S_{IP}(LNA=OFF)$; $S_{IP}(LNA=ON)$), are mutually
equal ($S_{IP}(LNA=OFF) = S_{IP}(LNA=ON)$):

15 h3i) checking whether the value $S_{IP}(LNA=OFF)$ of the signal quality parameter in the case of the amplifier (201) being switched OFF)) has an extreme value (S_{MAX});

h3ii) if the value $S_{IP}(LNA=OFF)$ of the signal quality parameter in the case of the amplifier being switched OFF (is unequal to said extreme value, deciding to switch the amplifier (201) to its ON state;

20 h3iii) if the value $S_{IP}(LNA=OFF)$ of the signal quality parameter in the case of the amplifier being switched OFF is equal to said extreme value, deciding to switch the amplifier (201) to its OFF state.

13. A method according to claim 1, wherein the step of measuring at least one
25 signal quality parameter comprises the step of measuring signal conditions of all available channels and the steps of measuring and deciding to switch are taken exclusively during an initializing procedure of the receiver.

14. A method according to claim 13, wherein the at least one signal quality
30 parameter comprises a signal-to-noise ratio and a signal strength of each of the available channels.

15. A signal quality measuring system for use in a receiver capable of receiving at least one input signal, designed to generate a signal indicative of intermodulation products.
16. A signal quality measuring system for use in a receiver capable of receiving at least one input signal, designed to generate a signal indicative of the status (active/inactive) of an automatic gain control system of the receiver.
17. A multi-channel receiver (200) comprising:
- an input (111) for receiving a wideband signal potentially comprising multiple channels;
 - a tuner stage (110);
 - a wideband amplifier (201) connected between said input (111) and said tuner (110);
 - a controllable switch (202) bridging said amplifier (201);
 - a switch controller (203) designed to generate a switch control signal (BSC);
- wherein the switch controller (203) is designed to measure at least one signal quality parameter and to generate its switch control signal (BSC) on the basis of the measured parameter; and
- wherein the switch controller (203) is designed to switch the switch (202) from its closed state (amplifier inactive) to its open state (amplifier active) exclusively during at least one time interval when a channel is selected.